

Section 1 - Chemical Product and Company Identification

Product Name: Mako™ Insecticide

Common Name, Synonym: cypermethrin

Material Uses: Insecticide

Manufacturer/Manufactured For: Engage Agro Corporation 1030 Gordon St., Guelph ON N1G 4X5

Phone (519) 826-7878 FAX (519) 826-7675 Poison Control: 1-866-336-2983 Spill: 1-866-613-3336

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	%
Xylene	1330-20-7	>=40.0 - <=70.0

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

COMBUSTIBLE. IRRITANT. SENSITIZER.

May cause sensitization by skin contact.

Irritating to eyes and skin.

Contains a suspect teratogen.

Potential Health Effects: See Product Label for additional precautionary statements.

Irritation: Irritating to eyes, respiratory system and skin.

Sensitization: Danger of skin sensitization on repeated contact.

Section 4 - First Aid Measures

General Advice: Remove contaminated clothing. Immediate medical attention required. Show container, label and/or safety data sheet to physician.

If Inhaled: Keep patient calm, remove to fresh air. Assist in breathing if necessary. Consult a physician.

If on skin: Wash affected areas thoroughly with soap and water. Remove contaminated clothing. If irritation develops, seek medical attention.

If swallowed: DO NOT INDUCE VOMITING. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

Notes to Physician: Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

Section 5 - Fire-Fighting Measures

Flash Point: 28 °C

Information on: Xylene:

Autoignition Temperature: approx.. 463 – 528 °C Literature data.

LEL/UEL: 1.0%(V) – 7.8%(V)

Suitable Extinguishing Media: Water spray, carbon dioxide, foam, dry extinguishing media

Hazards during fire-fighting: carbon monoxide, Hydrogen chloride, nitrogen oxides, organochloric compounds. The substances/groups of substances mentioned can be released in case of fire.

Protective equipment for fire-fighting: Wear self-contained breathing apparatus and chemical-protective clothing.

Further Information: In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Section 6 - Accidental Release Measures

Personal precautions: Use personal protective clothing. Avoid contact with the skin, eyes and clothing. Remove contaminated clothes, undergarments and shoes immediately.

Environmental precautions: Do not discharge into drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

Cleanup: Cleaning operations should be carried out only while wearing breathing apparatus. Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labeled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

For large amounts: Dike spillage. Pump off product.

Section 7 - Handling and Storage

Handling Precautions:

General advice: No special measures necessary if stored and handled correctly.

Protection against fire and explosion: Vapours may form explosive mixture with air. The product is combustible. Prevent electrostatic charge sources of ignition should be kept well clear – fire extinguishers should be kept handy.

Storage Requirements:

Storage stability: Storage duration: 24 months. The stated storage temperature should be noted.

Section 8 - Exposure Controls / Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Personal protective equipment:

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection: Breathing protection if gases/vapours are formed. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.

Hand protection: Chemical resistant protective gloves, Suitable materials, nitrile rubber (Buna N), chloroprene rubber (Neoprene)

Eye protection: Tightly fitting safety goggles (chemical goggles).

Body protection: Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures: The statements on personal protective equipment in the instructions for use apply when handling crop-protection agents in final-consumer packing. Avoid contact with the skin, eyes and clothing. Wearing closed work clothing is recommended. Wash soiled clothing immediately.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance and Odor: clear, aromatic

Odor Threshold: No data available.

Vapor Pressure: approx. 11.7 hPa (25 °C) for solvent

Density: 1.006 g/cm³ (20 °C)

Bulk Density: dropped

Specific Gravity (H₂O=1, at 4 °C):

pH Value: 4.9 (20 g/l)

Freezing Point: -50°C

Solubility in water: (20 °C) emulsifiable

Information on: xylene

Partitioning coefficient n-octanol/water (log Pow):

3.12 – 3.20

Section 10 - Stability and Reactivity

Substances to avoid: strong alkalis

Hazardous reactions: No hazardous reactions if stored and handled as prescribed/indicated.

Decomposition products: Hazardous decomposition products: No hazardous decomposition products if stored and handles as prescribed/indicated.

Thermal decomposition: No decomposition if stored and handles as prescribed/indicated.

Section 11- Toxicological Information

Toxicity Data:*

Acute toxicity:

Oral: LD₅₀/rat/male/female: 760 mg/kg

Inhalation: Information on cypermethrin

Dermal: LD₅₀/rat/male/female: > 2,000 mg/kg

Skin irritation: rabbit: Irritant.

Eye Irritation: rabbit:

Risk of serious damage to eyes

Sensitization: guinea pig:

Caused skin sensitization in animal studies.

Chronic toxicity:

Developmental toxicity/teratogenicity: *Information on: Xylene*

A teratogenic potential cannot be excluded

Other information:

Misuse can be harmful to health.

May cause paraesthesia.

Section 12 - Ecological Information

Environmental fate and transport

Biodegradation:

Evaluation: Not readily biodegradable (by OECD criteria).

Environmental toxicity

Acute and prolonged toxicity to fish: Rainbow trout/LC50 (96h): 0.01 mg/l

Acute toxicity to aquatic invertebrates: Daphnia magna/EC50 (48h): 0,8 µg/l

Information on Cypermethrin

Other ecotoxicological advice:

Do not allow to enter soil, waterways or waste water channels. Do not discharge product into the environment without control.

Section 13 - Disposal Considerations

Waste disposal of substance: See product label for disposal and recycling instructions.

Section 14 - Transportation Information

Reference Bill of Lading

Section 15 - Regulatory Information

Federal Regulations

Registration status: DSL, CA released/listed

WHIMIS Hazard Class: not required

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations (CPR)* and the MSDS contains all the information required by those regulations.

Section 16 - Other Information

Preparation Date: February 26, 2015

Prepared By: Engage Agro Corporation

NOTICE TO READER: THE INFORMATION CONTAINED IN THIS MATERIAL SAFETY DATA SHEET ("MSDS") RELATES ONLY TO THE SPECIFIC PRODUCT(S) DESIGNATED HEREIN (THE "PRODUCT"). THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CURRENT AND CORRECT AS OF THE DATE OF THIS MSDS, AND OBTAINED FROM SOURCES THAT ARE BELIEVED TO BE RELIABLE. HOWEVER, THIS INFORMATION IS FURNISHED WITHOUT WARRANTY, REPRESENTATIONS OR LICENSE OF ANY KIND, EXPRESS OR IMPLIED, WITH RESPECT TO ACCURACY, CORRECTNESS OR COMPLETENESS, AND NEITHER (MILLER CHEMICAL AND FERTILIZER CORPORATION.) NOR ITS MARKETING AFFILIATES (EACH, A "SELLER") ASSUME ANY LEGAL RESPONSIBILITY FOR USE OR RELIANCE UPON SAME.

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